

Title (en)

HEAT EXCHANGER AND AIR CONDITIONING DEVICE IN WHICH SAME IS USED

Title (de)

WÄRMETAUSCHER UND KLIMAAANLAGENVORRICHTUNG DAMIT

Title (fr)

ÉCHANGEUR DE CHALEUR ET DISPOSITIF DE CLIMATISATION DANS LEQUEL CE DERNIER EST UTILISÉ

Publication

EP 4163579 A4 20230719 (EN)

Application

EP 20939950 A 20200608

Priority

JP 2020022543 W 20200608

Abstract (en)

[origin: EP4163579A1] A heat exchanger includes a plurality of flat tubes extending in a first direction and arranged with spacing from each other in a second direction, and a header extending in the second direction and connecting end portions of the adjacent flat tubes of the plurality of flat tubes in the first direction. A flow passage provided inside the header includes a plurality of partition portions each provided between the adjacent flat tubes and configured to block at least a part of the flow passage between the adjacent flat tubes, a plurality of insertion portions formed between the adjacent partition portions and into which the plurality of flat tubes are inserted, a first communication passage allowing one ends of the adjacent insertion portions to communicate with each other, and a second communication passage allowing an other ends of the adjacent insertion portions to communicate with each other. A cross-sectional area of the first communication passage, of a cross-section perpendicular to the second direction is larger than a cross-sectional area of the second communication passage, of a cross-section perpendicular to the second direction, and the first communication passage is provided with a first refrigerant inlet connected to the flow passage and allowing the refrigerant flow into the header. Thus, a heat exchanger performance can be improved by reducing a refrigerant pressure loss and by achieving uniform distribution of the refrigerant.

IPC 8 full level

F28D 1/053 (2006.01); **F28F 1/02** (2006.01); **F28F 9/02** (2006.01); **F28F 9/26** (2006.01)

CPC (source: EP US)

F28D 1/053 (2013.01 - US); **F28D 1/05358** (2013.01 - EP); **F28D 1/05383** (2013.01 - EP); **F28F 1/02** (2013.01 - US); **F28F 1/022** (2013.01 - EP); **F28F 9/0209** (2013.01 - EP); **F28F 9/0212** (2013.01 - US); **F28F 9/0221** (2013.01 - EP); **F28F 9/0224** (2013.01 - EP); **F28F 9/026** (2013.01 - EP); **F28F 9/26** (2013.01 - US); **F28F 2009/0297** (2013.01 - EP)

Citation (search report)

- [A] DE 102007001430 A1 20070712 - DENSO CORP [JP]
- [A] EP 3605002 A1 20200205 - DAIKIN IND LTD [JP]
- [A] US 2007251682 A1 20071101 - SASAKI HIRONAKA [JP]
- See also references of WO 2021250743A1

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

Designated validation state (EPC)

KH MA MD TN

DOCDB simple family (publication)

EP 4163579 A1 20230412; **EP 4163579 A4 20230719**; CN 115698617 A 20230203; JP 7292513 B2 20230616; JP WO2021250743 A1 20211216; US 2023168047 A1 20230601; WO 2021250743 A1 20211216

DOCDB simple family (application)

EP 20939950 A 20200608; CN 202080101686 A 20200608; JP 2020022543 W 20200608; JP 2022530368 A 20200608; US 202017921188 A 20200608